

CLAIMS

1. A programmable logic integrated circuit used in a communication system, comprising:

at least a first and a second physical layer module each can interact with a physical medium under a predetermined specification;

a media independent interface that can receive a first set of data from either one of the first and the second physical layer modules and generate a second set of data; and

a media access control module that processes the second set of data.

2. The integrated circuit of claim 1 wherein the media independent interface and the media access control module are implemented using a programmable logic fabric and the first and the second physical layer modules are fixed logic components embedded in the programmable logic fabric.

3. The integrated circuit of claim 2 further comprising an interconnect logic layer separating the fixed logic components from the programmable logic fabric.

4. The integrated circuit of claim 3 wherein the interconnect logic layer comprises interconnecting tiles.

5. The integrated circuit of claim 2 wherein the media access control module comprises a first portion and a second portion, and wherein the first portion remains unchanged after configuration and the second portion is partial reconfigurable in response to a selection of either the first or the second physical layer module.

6. The integrated circuit of claim 1 wherein the predetermined specification is home phoneline networking specification.

7. The integrated circuit of claim 1 wherein the predetermined specification is Ethernet specification.

8. A programmable logic integrated circuit used in a communication system, comprising:

a physical layer module that can interact with a physical medium under a predetermined specification; and
at least a first and a second media access control module that can receive and process data from the physical layer module.

9. The integrated circuit of claim 8 wherein the first and the second media access control modules are implemented using a programmable logic fabric and the physical layer module is a fixed logic component embedded in the programmable logic fabric.

10. The integrated circuit of claim 9 further comprising an interconnect logic layer separating the fixed logic component from the programmable logic fabric.

11. The integrated circuit of claim 10 wherein the interconnect logic layer comprises interconnecting tiles.

12. The integrated circuit of claim 8 wherein the specification is HiperLAN2 wireless local area network specification.

13. The integrated circuit of claim 8 wherein the specification is IEEE 802.11a wireless local area network specification.